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10/643,238	08/18/2003	David C. Streuli	FDN-2746	3286

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INTERNATIONAL SPECIALTY PRODUCTS

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EXAMINER

GOLLAMUDI, SHARMILA S

ART UNIT PAPER NUMBER

1616

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,238

Applicant(s)

STREULI ET AL.

Examiner

Sharmila S. Gollamudi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-6 are pending in this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is directed “A 55% VOC composition according to claim 1”; however it is not clear which compound or compounds the applicant is referring to since there are several volatile organic compounds in claim 1. For instance, claim 1 recites an alcohol, a hydrofluorocarbon (HFC), and propane/butane in the composition, and all of these components are volatile organic compounds. Thus, it is unclear which VOC applicant is referring to since claim 2 is directed to 45% ethanol, 31% HFC, and 6% propane/butane wherein the total amount of volatile organic compounds is 82% and applicant is claiming a 55% VOC composition.

It should be noted for the record that VOC has not been rejected under indefiniteness since VOC is a common term and known term used in the cosmetic and aerosol art. However, the examiner does recommend that applicant clarify the claims by using “volatile organic compound (VOC)” or the alternative “VOC (volatile organic compound)”.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbs et al (6,752,983) in view of RD 422068.

Dobbs teaches a hair spray with reduced volatile organic compounds. Dobbs teaches the Environmental Protection Agency (EPA) has mandated a reduction in the VOC content of hair sprays to 80% or less by 1998. The state of California has set an even more stringent requirement for VOCs in hair spray than the EPA, limiting VOCs to 55% by June 1999. Further, Dobbs teaches propellants such as dimethylether, isobutane, and propane and solvents such as ethanol are VOCs (volatile organic compounds) and must be considered as such in the hair spray formulations in which they are used. Dobbs teaches that to lower the VOC content of the spray, many manufacturers have replaced ethanol in their sprays with water. However, an increase in the water concentration can adversely affect the performance of the hair spray by accelerating the initial curl droop and/or increasing the dry time on the hair.

Dobbs teaches a composition comprising a fixative, ethanol, and methyl acetate and/or t-butyl acetate, a propellant, and optionally water. Preferably the composition comprises: (a) **from about 1 to about 10% fixative**; (b) **from about 20 to about 75% ethanol**; (c) from about 1 to

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about 60% acetate (methyl acetate and/or t-butyl acetate); and (d) **from about 15 to about 45% propellant**. More preferably the composition comprises from about 2 to about 8% fixative and from about 20 to about 35% propellant. The above formulations may also contain water, which preferably comprises from **about 0.01 to about 45%** of the composition, and more preferably from about 0.01 to about 30% of the composition. See column 6, lines 15-35.

Dobbs teaches the manipulation of the concentrations of each component. For instance, the lower end of ethanol may be 25%, 30%, 35%, 40%, 45%, or 50%. Dobbs teaches the endpoints of acetate and ethanol weight percentages can be selected and combined in any combination that is mathematically possible, and can be combined with the preferred or more preferred fixative, propellant, and water weight ranges. For example, in a more preferred embodiment, the compositions of this invention comprise from about 20 to about 55 weight % ethanol; from about 10 to about 40 weight % methyl acetate; from about 4 to about 8 weight % fixative; and from about 20 to about 35 weight % propellant. See column 6, lines 36-62.

Dobbs teaches an "organic solvent-based" formulation refers to a formulation in which the ingredients are soluble, dispersible, or miscible in a organic solvent. Water can be present in such formulations, but typically at concentrations no more than 15 % water. A "water solvent-based" formulation refers to a formulation in which the ingredients are soluble, dispersible, or miscible in water or a water/organic solvent mixture. Organic solvents may also be present in such formulations, typically at any level. However, the organic solvents preferably do not exceed 55 weight % of the formulation.

Dobbs teaches suitable propellants include propane, isobutane, n-butane,

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dimethyl ether (hydrocarbon), **1,1-difluoroethane** (hydrofluorocarbon), 1,1,1,2-tetrafluoroethane, and mixtures thereof. In one particularly preferred embodiment the propellant comprises 1,1-difluoroethane (hydrofluorocarbon). In an organic solvent-based systems, a mixture of propane and isobutane is preferred. The propellant preferably comprises from about 5 to about 50 parts by weight propane and from about 50 to about 95 parts by weight isobutane. If any water is present in the formulation, then the propellant system also preferably comprises, in addition to propane and butane, dimethyl ether or one of the hydrofluorocarbons (HFC) discussed above. See column 8, lines 45-61. Note that this is a suggestion of instantly claimed isobutane, propane, and HFC.

Dobbs teaches the inclusion of other conventional additives such as preservatives, fragrances, antifoaming agents, hair conditioners, detackifiers, **corrosion inhibitors**, wetting agents, emulsifiers, gloss enhancers, and plasticizers may be added in quantities as desired, up to about 5% by weight of the total formulation. Dobbs teaches any fixative polymer that is commercially available and routinely used in the art may be used. See column 8, lines 62-65.

Dobbs does not teach the instant isobutylene/ethylmaleimide/hydroxyethylmaleimide copolymer as the hair fixative.

RD '068 teaches AQUAFLEX FX-64 (isobutylene/ethylmaleimide/hydroxyethylmaleimide) as a new hair styling polymer that is environmentally friendly and may be used in styling products such as mousses, gels, and lotions. The polymer has enhanced styling effects on the hair and easy to incorporate in a composition. See abstract.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Dobbs et al and RD '068 and utilize the AQUAFLEX FX-64 in Dobbs hair composition. One would have been motivated to do so since RD '068 teaches the AQUAFLEX FX-64 is a styling polymer that not only has enhanced styling effects but also is environmentally friendly. Thus, a skilled artisan would have expected success by the instant combination since not only does Dobbs teach any hair polymer that is known in the art may be used but Dobbs teaches an environmentally acceptable hair composition with a low VOC and the use of the instant hair fixative would further enhance the environmental acceptability of the composition.

With regard to claim 2, the examiner points out that Dobbs provides the general weight percents of each instantly claimed component. Dobbs teaches (a) from about 1 to about 10 % fixative, which encompasses instantly claimed "about 4% of copolymer"; (b) from about 20 to about 75 % ethanol, which encompasses instantly claimed "about 45% ethanol"; (c) from about 15 to about 45 % propellant, which encompasses instantly claimed "about 31% of (a) and about 6% of (b)"; and (d) about 0.01 to about 45 weight % of the composition, more preferably from about 0.01 to about 30 weight % of the composition, which encompasses instantly claimed "about 12% of water". See column 6, lines 15-35. With regard to the propellant system, firstly Dobbs teaches the preference for the use of a mixture of propane in the amount of 5-50% and butane in the amount of 50-95%, which encompasses instantly claimed "50/50 mixture of propane/isobutene". Further, Dobbs teaches if water is present, then the propellant system preferably comprises, in addition to propane and butane (50-95), dimethyl ether or a hydrofluorocarbons. Thus, it is the examiner's position that the manipulation of concentrations

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that it is within the skill of an artisan which is done during routine experimentation. Also, the examiner points out that Dobbs teaches the manipulation of the various components on column 6, depending on the other components and their weight percent in the composition. For instance, Dobbs teaches the use of a lower concentration of ethanol, if water and propellant are included in the formulation. Moreover, Dobbs teaches that EPA has mandated the lowering of VOCs in an amount of 80% or less and California mandates limiting VOCs to 55%, thus if a skilled artisan would have been motivated to manipulate the above concentrations within the EPA's guidelines. Furthermore, one would have been motivated to utilize to a lower concentration of water since Dobbs teaches water can adversely effect the curl holding properties of the composition. Lastly, it should be noted that generally difference in concentrations do not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such as concentration is critical. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbs et al (6,752,983) in view of RD 422068 in further view of Chang et al (6,214,328).

The teachings of Dobbs et al and RD '068, respectively, have been set forth above, in detail. Dobbs teaches a hair spray with reduced volatile organic compounds. The composition comprises: (a) from about 1 to about 10% fixative; (b) from about 20 to about 75% ethanol; (c) from about 1 to about 60% acetate (methyl acetate and/or t-butyl acetate); and (d) from about 15 to about 45% propellant. More preferably the composition comprises from about 2 to about 8% fixative and from about 20 to about 35% propellant. The above formulations may also contain water, which preferably comprises from about 0.01 to about 45% of the composition, and more

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preferably from about 0.01 to about 30% of the composition. See column 6, lines 15-35. Dobbs teaches the inclusion of other conventional additives such as preservatives, fragrances, antifoaming agents, hair conditioners, detackifiers, corrosion inhibitors, **wetting agents**, emulsifiers, gloss enhancers, and **plasticizers** may be added in quantities as desired, up to about 5% by weight of the total formulation.

RD '068 teaches (isobutylene/ethylmaleimide/hydroxyethylmaleimide) as a new hair styling polymer that is environmentally friendly and may be used in styling products such as mousses, gels, and lotions.

Although Dobbs teaches the use of plasticizers and wettings agents (surfactants), the instant cationic surfactants or silicones are not specified.

Chang teaches a an aqueous hair styling compositions having a fixative resin and containing low (80 weight percent or less) VOC concentrations. See abstract. Chang teaches one more surfactants may be added to low-VOC hair styling composition, which typically reduce the surface tension of the composition. When surfactants are present in the hair styling composition, they are preferably present at a concentration of from 0.001 to 1%. The surfactants that may be used in the hair styling composition include, for example, anionic, **cationic**, nonionic and amphoteric surfactants. Further, one or more plasticizers may be added to the hair styling composition of the present invention at a concentration of from 0.001 to 1%. The plasticizers include those that are known and typically used in the art such as dimethicone copolyol, dimethicone, **phenyltrimethicones**, and trialkylcitrate. See column 6, lines 42-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Dobbs et al, RD '068, and Chang et al and utilize the

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instantly claimed additives in the hair composition of Dobbs. One would have been motivated to do so since Chang teaches the conventional use of surfactants, such cationic surfactants, to reduce surface tension of the composition. Further, a skilled artisan would have been motivated to use plasticizers such as phenyltrimethicone, since plasticizers modify the flow properties and flexibility of the composition. Lastly, a skilled artisan would have reasonably expected similar results since Dobbs teaches that additives such as wetting agents and plasticizers may be used in the composition without effecting the performance of the composition.

Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalbfleisch et al (6,589,510).

Kalbfleisch et al teach a hair treatment product for imparting volume to a hairdo or for strengthening the hair shafts of the hairdo. The hair treatment product is a pressure-resistant aerosol container containing a composition comprising at least 60 percent by weight water; from 1 to 30 percent by weight of C1 to C5 alcohol as a foam-breaking agent; from 0.01 to 5 percent by weight of a foam-forming surfactant; from 0.1 to 20 percent by weight of at least one hair-fixing polymer; and an aerosol propellant in the amount of 1 to 30 percent. See abstract and column 5, lines 25-41.

Specifically, example 1 teaches a composition comprising 5.6g AQUAFLEX FX-64 (isobutylene/ethylmaleimide/hydroxyethylmaleimide copolymer), 10g ethanol, 0.15g cetyltrimethylammonium chloride (**cationic surfactant**), 0.2g laureth-4, 0.2g perfume, 10g perfume, and **water** to balance. The components are then mixed with a propellant mixture of dimethylether/propane.

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The aerosol propellants are preferably contained in the compositions from 2 to 20 percent by weight. Lower alkanes, such as n-butane, i-butane, propane, butane or their *mixtures* and dimethylether or fluorinated hydrocarbons, such as HFC152a (**1,1-difluoroethane**) or HFC134 are suitable. The propellants also include those propellants that are present in gaseous form under pressure, such as N₂, N₂O, and CO₂ and mixtures of those propellants. The lower alkanes and dimethylether are especially preferred as those propellants. Especially good spraying and foaming properties are obtained with a mixture of *at least* one lower alkane, especially butane, and dimethylether. A ratio of dimethylether to alkane of 2:1 to 8:1 is preferred, while a ratio of 3:1 to 6:1 is particularly preferred. See column 5, lines 25-41.

Kalbfleisch teaches the use of conventional packaging or container materials comprising metal, such as aluminum or tin plate, or pressure-resistant plastic materials. Further, Kalbfleisch teaches that since the composition contains water, a corrosion-resistant interior coating or addition of a known **corrosion inhibitor** should be considered. See column 6 lines 11-20.

Kalbfleisch does not specify the instant combination of a hydrofluorocarbon (HFC) and propane/isobutane.

Although Kalbfleisch does not teach the instant combination, it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to the teachings and suggestion of Kalbfleisch and utilize a propellant system containing (HFC) and a mixture of propane and isobutane. One would have been motivated to use a mixture of isobutane and propane since firstly Kalbfleisch teaches the propellant may be lower alkanes, such as n-butane, i-butane, butane, or propane, and their **mixtures**. Secondly, one would have been motivated to further add the instant HFC since Kalbfleisch teaches the propellant is lower alkanes, such as n-

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butane, i-butane, butane, or propane, and their mixtures **and** dimethylether or fluorinated hydrocarbons (HFC). Thus, Kalbfleisch teaches that a mixture of lower alkanes may be used with dimethyl ether or HFC. Although Kalbfleisch prefers the mixture of at least one lower alkane and dimethylether, disclosed examples and preferred embodiments do not constitute a teaching away from the broader disclosure or nonpreferred embodiment". In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Therefore, the instantly claimed propellant system is considered prima facie obvious in view of Kalbfleisch's teachings.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalbfleisch et al (6,589,510) in further view of Chang et al (6,214,328).

As set forth in detail above, Kalbfleisch et al teach a hair treatment product for imparting volume to a hairdo or for strengthening the hair shafts of the hairdo. The hair treatment product is a pressure-resistant aerosol container containing a composition comprising at least 60 percent by weight water; from 1 to 30 percent by weight of C1 to C5 alcohol as a foam-breaking agent; from 0.01 to 5 percent by weight of a foam-forming surfactant; from 0.1 to 20 percent by weight of at least one hair-fixing polymer; and an aerosol propellant in the amount of 1 to 30 percent. See abstract and column 5, lines 25-41. Further, Kalbfleisch teaches the composition can further contain conventional additive ingredients. These additive ingredients include, physiologically compatible silicone derivative compounds, e.g. volatile or non-volatile silicone oils or high molecular weight siloxane polymers, in an amount of from 0.05 to 20 percent by weight; light-protective agents; anti-oxidants; radical trapping agents; anti-flaking ingredients, in an amount of from about 0.01 to 2 percent by weight; luster-imparting substances; vitamins; compatibility-improving agents and de-fatting agents. See column 6, lines 1-9.

Kalbfleisch does not teach the instant silicone.

Chang teaches a an aqueous hair styling compositions having a fixative resin and containing low (80 weight percent or less) VOC concentrations. See abstract. Chang teaches one more surfactants may be added to low-VOC hair styling composition, which typically reduce the surface tension of the composition. When surfactants are present in the hair styling composition, they are preferably present at a concentration of from 0.001 to 1%. The surfactants that may be used in the hair styling composition include, for example, anionic, cationic, nonionic and amphoteric surfactants. Further, one or more plasticizers may be added to the hair styling composition of the present invention at a concentration of from 0.001 to 1%. The plasticizers include those that are known and typically used in the art such as dimethicone copolyol, dimethicone, **phenyltrimethicones**, and trialkylcitrate. See column 6, lines 42-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kalbfleisch and Chang et al and utilize the instantly claimed phenyltrimethicone in the hair composition of Kalbfleisch. One would have been motivated to do so since Chang teaches the conventional use plasticizers such as phenyltrimethicone (a silicone) are routinely used in hair compositions. Thus, a skilled artisan would have been motivated to use a plasticizers since plasticizers modify the flow properties and flexibility of the composition. Further, a skilled artisan would have reasonably expected similar results since Kalbfleisch teaches other additives such as silicones may be used in the composition without effecting the performance of the composition.

Conclusion

All the claims are rejected at this time.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharmila S. Gollamudi whose telephone number is 571-272-0614. The examiner can normally be reached on M-F (8:00-5:30), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on 571-272-0887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharmila S. Gollamudi
Examiner
Art Unit 1616

SSG

